Claims

1. In a network having interconnected nodes and data tuples to represent nodal connections, a method for calculating connections between nodes, the method comprising:

identifying singly heard host links; and

building tuples to represent an infrastructure connected to the singly heard host links.

2. The method of claim 1, further comprising:

resolving conflicts among tuples; and

removing redundant neighbor information for connector-to-host links.

3. The method of claim 2, wherein the step of resolving conflicts comprises:

identifying a single conflict link tuple having a host that is identified in an extra host link tuple;

determining whether the extra host link tuple and the single conflict link tuple have the same port specification for the host; and

if the port specification is the same, classifying the single conflict link tuple as a singly heard host link tuple.

4. The method of claim 2, wherein the step of removing redundant data comprises:

identifying a multi-heard host link tuple having a host that is identified in an extra host link tuple,

determining whether the extra host link tuple and the multi-heard host link tuple have a different port specification for the host; and

if the port specification is different, classifying the multi-heard host link tuple as an extra host link tuple.

5. The method of claim 1, further comprising:

clarifying device connectivity by requesting additional information about nodal connections, and

consolidating tuples for shared media devices.

6. The method of claim 1, wherein the step of identifying singly heard host links comprises:

identifying conn-to-conn link tuples;

identifying conn-to-host tuples; and

if a tuple is a conn-to-host tuple hearing a first host on a first port, determining whether the connector hears any other hosts on the first port; and

if the connector hears any other host on the first port, classifying the tuple as a multi-heard host link tuple.

7. The method of claim 1, wherein the step of building comprises:

creating tuples based on singly-heard host links;

creating tuples based on conn-to-conn links using existing tuples;

creating tuples based on conn-to-conn links using extra host links tuples; and

attempting to disprove invalid conn-to-conn links tuples.

8. A system for managing a network by mapping the network's topology using tuples to represent connections between network nodes comprising:

a tuple manager that gathers data from the network nodes; and

a connection calculator that builds tuples based on the data gathered by the tuple manager.

9. The system of claim 8, wherein the connection calculator identifies singly heard host links, and builds tuples to represent an infrastructure connected to the singly heard host links.

10. The system of claim 9, wherein the connection calculator identifies singly heard host links by

identifying conn-to-conn link tuples;

identifying conn-to-host tuples; and

if a tuple is a conn-to-host tuple hearing a first host on a first port, determining whether the connector hears any other hosts on the first port; and

if the connector hears any other host on the first port, classifying the tuple as a multi-heard host link tuple.

11. The system of claim 8, wherein the connection calculator resolves conflicts among tuples, and removes redundant neighbor information for connector-to-host links.

12. The system of claim 8, wherein the connection calculator clarifies device connectivity by requesting the tuple manager to obtain additional information about nodal connections, and consolidates tuples for shared media devices.

13. The system of claim 8, wherein the connection calculator builds tuples by:

creating tuples based on singly-heard host links;

creating tuples based on conn-to-conn links using existing tuples;

creating tuples based on conn-to-conn links using extra host links tuples; and

attempting to disprove invalid conn-to-conn links tuples.

14. A computer-readable medium having computer-executable instructions for performing a method for calculating connections between nodes of a network comprising:

identifying singly heard host links; and

building tuples to represent an infrastructure connected to the singly heard host links.

15. The medium of claim 14, wherein the method comprises:

resolving conflicts among tuples by requesting additional information about nodal connections; and

removing redundant neighbor information for connector-to-host links.

16. The method of claim 15, wherein the step of resolving conflicts comprises:

identifying a single conflict link tuple having a host that is identified in an extra host link tuple;

determining whether the extra host link tuple and the single conflict link tuple have the same port specification for the host; and

if the port specification is the same, classifying the single conflict link tuple as a singly heard host link tuple.

17. The method of claim 15, wherein the step of removing redundant data comprises:

identifying a multi-heard host link tuple having a host that is identified in an extra host link tuple,

determining whether the extra host link tuple and the multi-heard host link tuple have a different port specification for the host; and

if the port specification is different, classifying the multi-heard host link tuple as an extra host link tuple.

18. The medium of claim 14, wherein the method comprises:

clarifying device connectivity, and

consolidating tuples for shared media devices.

19. The medium of claim 14, wherein the step of identifying singly heard host links comprises:

identifying conn-to-conn link tuples;

identifying conn-to-host tuples; and

if a tuple is a conn-to-host tuple hearing a first host on a first port, determining whether the connector hears any other hosts on the first port; and

if the connector hears any other host on the first port, classifying the tuple as a multi-heard host link tuple.

20. The medium of claim 14, wherein the step of building comprises:

creating tuples based on singly-heard host links;

creating tuples based on conn-to-conn links using existing tuples;

creating tuples based on conn-to-conn links using the extra host links tuples; and

attempting to disprove invalid conn-to-conn links tuples.